REMARKS

THE CLAIM AMENDMENTS

Applicants have amended claims 97, 99 and 105-113 and added claims 114-120. Following entry of this amendment, claims 97, 99, and 105-120 will be pending in this application.

Applicants have amended claims 97, 99, 112 and 113 to specify that the neuropathy or chemical or physical injury is characterized by altered N-CAM or L1 isoform expression. Support for this amendment may be found, for example, at specification page 16, lines 19-23; page 70, line 16 to page 72, line 4; and page 76, lines 1–33.

Applicants have amended claims 97, 99, and 105-113 to specify that the identity or homology of the conserved region of the dimeric protein is at least one of the percentages recited in the claims. Support for this amendment may be found, for example, at specification page 39, line 19 – page 40, line 1 and page 40, lines 20–25.

Applicants have amended claims 105-111 to remove their dependency from claims 112 and 113.

Applicants have added claims 114-120. Support for this amendment may be found, for example, at specification page 20, lines 22–32 and Tables I and II.

None of the amendments introduces any new matter.

THE OBJECTIONS

Improper Dependency

Claims 105-111

The Examiner has objected to claims 105-111 as allegedly improperly depending from claims of a higher number.

Applicants have amended claims 105-111 to remove dependency from claims 112 and 113. Applicants have added claims 114-120 to depend from claims 112 and 113. Accordingly, the Examiner's objection has been obviated.

37 C.F.R. § 1.75

Claims 112 and 113

The Examiner has provisionally objected to claims 112 and 113 under 37 C.F.R. § 1.75 as allegedly being substantial duplicates of claims 97 and 99, respectively, should claims 97 and 99 be allowable. Applicants traverse.

Applicants respectfully submit that the scope of claims 97 and 112, as amended, are substantially different. The method steps recited in amended claim 97 include administering to a subject afflicted with neuropathy a morphogen comprising a dimeric protein having fragments of amino acids 38-139 and 43-139 of SEQ ID NO: 5 with homology. In contrast, the method steps recited in amended claim 112 include contacting a neuronal cell damaged by neuropathy with the above described morphogens. It is clear that the steps recited in amended claims 97 and 112 are not substantial duplicates of each other.

Similarly, claims 99 and 113, as amended, are substantially different. The method steps recited in amended claim 99 include administering to a subject having a neuron afflicted with a physical or chemical injury with a morphogen comprising a dimeric protein having fragments of amino acids 38-139 and 43-139 of SEQ ID NO: 5 with homology. In contrast, the method steps recited in amended claim 113 include contacting a neuronal cell damaged by a physical or chemical injury with the above described morphogens. Because amended claim 99 recites administering to a subject whereas amended claim 113 recites contacting a neuronal cell, they are not substantial duplicates of each other. Accordingly, applicants request that the Examiner withdraw this objection.

THE REJECTIONS

35 U.S.C. §112, First Paragraph - Enablement

The Examiner has rejected claims 97, 99, and 105-113 under 35 U.S.C. §112, first paragraph, for lack of enablement. The Examiner states that the specification, while enabled for "a method of decreasing neuronal cell death associated with neuropathy or injury in which neuronal survival is mediated by expression of N-CAM or L1 by administering to a subject with a morphogen comprising a dimeric protein having fragments of amino acids 38-139 and 43-139 of SEQ ID NO:5 with homology as recited in claim 97", does not provide enablement for a

method for decreasing neuronal cell death associated with all forms of neuropathy or chemical or physical injury associated with reduced N-CAM or L1 isoform activities. The Examiner contends that it is not clear what form of neuropathy is associated with reduced N-CAM or L1 isoform activities and what specific activities of N-CAM or L1 isoform are reduced and thus would be associated with a specific form of neuropathy. The Examiner further contends that there is insufficient disclosure in applicants' specification to demonstrate the claimed method is enabled in the CNS and that the state of the art in CNS regeneration is unpredictable.

Applicants traverse. However, solely to expedite prosecution of this application, applicants have amended claims 97, 99, 112, and 113 (and therefore, claims dependent therefrom) to recite that neuropathy or injury is characterized by altered N-CAM or L1 isoform expression. Accordingly, the amended claims 97, 99, 112, and 113 do not cover all forms of injuries and neuropathies but are directed to specific forms of neuropathies and injuries that are characterized by altered N-CAM or L1 isoform expression. Applicants respectfully submit that the claims, as amended, are fully enabled by applicants' specification. First, the specification describes at Example 3 on pages 70-72 the ability of morphogens to enhance neuronal cell survival. Specifically, the specification discloses that the ability of morphogens to enhance neuronal cell death indicates that they may be useful to enhance survival of neuronal cells at risk of dying, for example, to a neuropathy or chemical or mechanical trauma (see, page 71, lines 27-32). In addition to showing increased neuronal cell survival, Example 6 on pages 76-80 describes the ability of morphogens to induce N-CAM and L1 expression. The specification further discloses that the morphogens may be useful as therapeutic agents to treat neurological disorders associated with altered N-CAM levels (see, page 79, lines 20-24). Finally, the specification discloses at page 16, lines 19-23 the association between altered N-CAM levels and a number of neuropathies. Accordingly, applicants' specification provides sufficient disclosure to support the claimed method in injuries and neuropathies characterized by altered N-CAM or L1 isoform expression. Accordingly, applicants respectfully request that the Examiner withdraw this rejection.

With respect to the Examiner's contentions that applicants' specification does not provide sufficient disclosure to demonstrate that the claimed method is enabled in the CNS, applicants traverse. Applicants respectfully direct the Examiner to Example 3 on pages 70-72 of applicants' specification which describes and illustrates morphogen enhancement of neuronal cell survival. Specifically, Example 3 describes the enhancement of basal ganglia cell survival upon treatment with a morphogen, OP-1. Cell survival was enhanced significantly and was dose dependent upon the level of OP-1 added: cell death decreased significantly as concentration of OP-1 was increased in cell cultures (see, page 71, lines 12-23). The type of cells used in Example 3 are striatal basal ganglia isolated from the substantia nigra of adult rat brain (see, page 70, lines 29-32). Basal ganglia are a group of cells located within the brain and constitute a part of the CNS. Accordingly, applicants' specification provides more than adequate disclosure to support the claimed method in the CNS. Accordingly, applicants respectfully request that the Examiner withdraw this rejection.

35 U.S.C. §112, First Paragraph – Written description

The Examiner has rejected claims 97, 99, and 105-113 under 35 U.S.C. §112, first paragraph, for lack of written description. The Examiner contends that the recitation of "a neuropathy associated with reduced N-CAM or L1 isoform activities" and "lead, ammonia, organic solvents, formaldeyde" are not clearly disclosed in the specification and claims as filed and are new matter.

Applicants traverse. However, solely to expedite prosecution of this application, applicants have amended claims 97, 99, 112, and 113 (and therefore, claims dependent therefrom) to recite that the neuropathy or injury is characterized by altered N-CAM or L1 isoform expression. Support for this amendment may be found, for example, on page 16, lines 19-23; page 70, line 16 to page 72, line 4; and page 76, lines 1–33.

With respect to the Examiner's contention that the recitation of "lead, ammonia, organic solvents, formaldehyde" lacks written description, applicants direct the Examiner to page 12,

lines 30-34 of the specification for support. Accordingly, applicants respectfully request that the Examiner withdraw this rejection.

35 U.S.C. § 112, Second Paragraph

The Examiner has rejected claims 97, 105-112 under 35 U.S.C. § 112, second paragraph, for being indefinite. The Examiner contends that the specification fails to define the recitation of "a neuropathy associated with reduced N-CAM or L1 isoform activities." The Examiner also contends that "activities" as described in the specification has no limitation and is therefore indefinite.

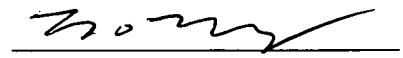
Applicants traverse. However, solely to expedite prosecution of this application, applicants have amended claims 97 and 112 (and therefore, claims dependent therefrom) to recite that the neuropathy is characterized by altered N-CAM of L1 isoform expression. Applicants respectfully point out that the amended claims clearly define the type of neuropathy (i.e., one that is characterized by altered N-CAM of L1 isoform expression). Accordingly, applicants respectfully request that the Examiner withdraw this rejection.

CONCLUSION

In view of the foregoing amendments and remarks, applicants request that the Examiner reconsider and withdraw all outstanding rejections and allow the pending claims.

The Examiner is invited to telephone applicants' representatives regarding any matter that may be handled by telephone to expedite allowance of the pending claims.

Respectfully submitted,



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